

CLAIMS

- [001] A thick-film heating device (1) for fluids for mounting in a continuous heating device (100), comprising at least one thick-film heating element (2) embodied as an electric resistance heater and at least one heat transmission element (3) which is connected in a heat-conducting manner to the thick-film heating element (2) and the fluid so as to transfer the heat generated by the thick-film heating element (2) to the fluid, characterised in that a power control device (31) is provided for initiating a continuous or almost continuous control of the thick-film heating element (2).
- [002] 2. The thick-film heating device (1) according to claim 1, characterised in that the power control can be carried out by means of phase-angle or pulse pause modulation.
- [003] 3. The thick-film heating device (1) according to claim 1 or 2, characterised in that the power control device is a thyristor or a triac.
- [004] 4. The thick-film heating device (1) according to any one of the preceding claims, characterised in that a cooling device is coupled to the power control device to remove the heat produced during operation of the power control device (31).
- [005] 5. The thick-film heating device (1) according to any one of the preceding claims, characterised in that the cooling device is formed by the heat transmission element (3) and the power control device (31) is arranged on the heat transmission element (3) and is connected thereto in a good heat-conducting manner.
- [006] 6. The thick-film heating device (1) according to any one of the preceding claims, characterised in that the heat transmission element (3) is made of a material which has a poor thermal conductivity in the lateral direction, e.g. stainless steel.
- [007] 7. The thick-film heating device (1) according to any one of the preceding claims, characterised in that the thick-film heating element (2) has precisely one heating circuit through electrical connection of corresponding heating section (5).

- [008] 8. The thick-film heating device (1) according to any one of the preceding claims, characterised in that the thick-film heating element (2) is formed from a material having a positive temperature characteristic (PTC).
- [009] 9. The thick-film heating device (1) according to any one of the preceding claims, characterised in that there is provided a contacting device (9) disposed on the heat transmission element (3) which is electrically connected to the electrical elements of the thick-film heating device.
- [010] 10. A continuous heating device (100) comprising a thick-film heating device (1) especially according to any one of the preceding claims and a moulded part (50) connected positively thereto in a pressure-resistant and thermally stable manner to form a fluid chamber, wherein the moulded part (50) has at least one inlet (51) and at least one outlet (52).
- [011] 11. A household appliance, especially a dishwasher or a washing machine, characterised in that a thick-film heater, especially according to any one of claims 1 to 9, is disposed in the household appliance.
- [012] A household appliance, especially a dishwasher or a washing machine, characterised in that a continuous heating device (100) according to claim 10 is disposed in the household appliance.
- [013] A household appliance, especially a dishwasher or a washing machine, comprising a continuous heating device with a thick-film heater (1) according to claim 1, wherein a cooling device is coupled to the power control device to remove heat produced during operation of the power control device (31).
- [014] The household appliance according to claim 13, characterised that the cooling device is formed by the heat transmission element (3) and the power control device (31) is

arranged on the heat transmission element (3) and is connected thereto in a heat-conducting manner.

- [015] The household appliance according to claim 14, characterised that the thick-film heater (1) is executed according to one or more of claims 2, 3 or 6 to 9.